ADVANTECH

FWA-3210A/B 1RU Network Application Platform x86-based Intel® Xeon™ E3 series and 2nd generation Core™ i7/i5/i3 processors
Startup Manual

Packing List

Before installation, ensure that the following materials have been received:

- One FWA-3210 Internet Security Platform
- One box of accessories
- One warranty certificate

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

Note: Acrobat Reader is required to view any PDF file. Acrobat Reader can be downloaded at: www.adobe.com/Products/acrobat/readstep2. html (Acrobat is a trademark of Adobe)

Specifications

Main Board Functions

- **CPU:** Intel® Xeon E3-1225/ E3-1275 (FWA-3210A only), and 2nd gen. Core™ i7-2600/i5-2400(FWA-3210B only), i3-2120, Pentium®-G850, Celeron®-G540 Processors
- **Chipset:** Intel® C206 PCH/ H61 PCH
- **BIOS:** AMI™
- **Memory:** Dual channel DDR3 1333/1066 MHz ECC (Xeon® processors only) Un-buffered memory, up to 32GB (FWA-3210A) /16GB(FWA-3210B)
- **Ethernet:** 6 x Intel® 82574L 10/100/1000 Mbps Ethernet with optional 3 segment bypass
- **PCIe Bus:**
  -1xGen2, PCI-E x8 gold finger support NMC module
  -1xGen2, PCI-E x8 or 2 x4 Add-on Card slot (C206 only)
- **C-Fast Interface:** 1 x C-Fast Socket
- **Storage:** 1 x 3.5"or 1 x 2.5" internal HDD / SSD
- **Peripherals:**
  -USB   2 x USB2.0 ports on front panel
  -Serial   1 x front console port RJ45
  -LCD Module 1 x2 character display
- **Dimensions(W x L x H):** 430mmx500mmx44mm
- **Weight:** 10Kg
- **Environment:** Operating   Non-operating
- **Temperature:** 0°C~ 40°C   -20°C ~ 75°C
            (32°F~104°F)   (-4°F~167°F)
- **Humidity:** 5% ~ 85% @40°C(104°F) 5% ~ 95%

Specifications

Express Modules

- **Interface:**
  - GbE Express Module:
    Supports 4 ports 10/100/1000 Base-T copper module
    Supports 4 ports 10/100/1000 Base-X SFP module
  - 10GE Express Module:
    Supports 2 ports 10 GbE Base-F SFP+ module
- **Controller:**
  - GbE Express Module
    2 x Intel® 82576 Dual Port GbE controllers
  - 10GbE Express Module:
    1x Intel® 82599 2-port 10 GbE controller
- **Dimensions (W x D):** 72 x 172 mm

Figure 1: NMC-0103 4-port RJ45 GE Module

Figure 2: NMC-0102 4-port SFP GE Module

Figure 3: NMC-1001 2 ports SFP+ 10GE Module

FWA-3210A Redundant

Front view

Back View

FWA-3210B Single PSU

Front view

Back View

Installation

Installing the CPUs

1. Locate the CPU sockets on the board.

2. Taking one CPU at a time, remove the protective shield, if present, and press the load lever and move it out till it is clear of the retention tab, and raise it.

3. Make sure that alignment triangle on the CPU lines up with the correct corner on the socket, and ease the CPU into place.
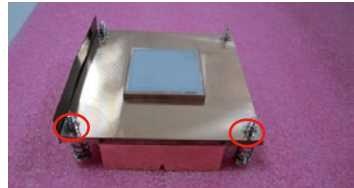

4. Close the load plate and push the load lever back down until it engages the retention tab.
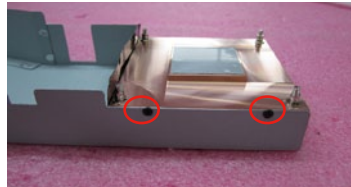

Installing the heatsink and air scoop

1. Unwrap heatsink and black Mylar air scoop. There are two threaded holes on each side of the heatsink that accommodate the air scoop screws.
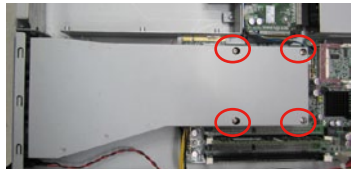

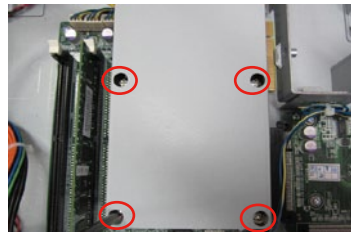2. Put heat sink and air scoop in place as shown.

3. Use the four black screws to attach the air scoop to the heatsink.
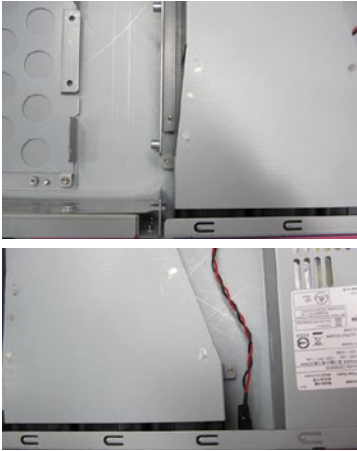

4. Align and carefully lower the heatsink into place.

5. Insert and loosely engage each heat sink screw. Then tighten carefully to secure the heat sink.

Installing the Riser Cards

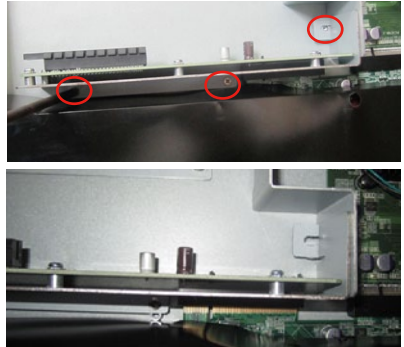1. Release four screws from chassis base and take out the bracket.

2. Release the first IO bracket screw and remove the first IO bracket.

3. Install the add-on card and secure with screw.

4. Release the screws and remove the riser card bracket.

5. Install the add-on card to riser card.

6. Replace brackets and secure firmly with screws.
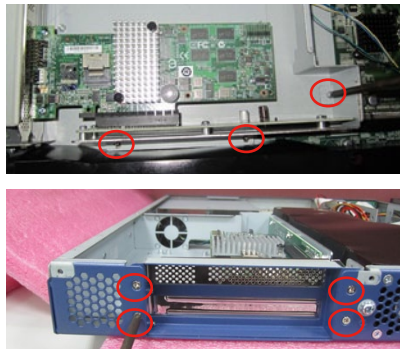
Installation

Installing Express Modules

1. Release two screws on the base chassis and remove the bracket.

2. Carefully install the NMC-10xx module.

3. Secure with two screws.

Installing 3.5" HDD Modules

1. Release the four screws and remove 3.5" HDD bracket.

2. Install one 3.5" HDD on the bracket with four screws.

3. Install 3.5" HDD module on the base chassis with four screws.

Installation

Installing 2.5" HDD Modules

1. Please release four screws and remove 2.5" HDD bracket.

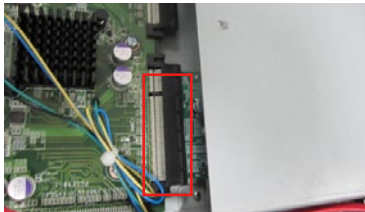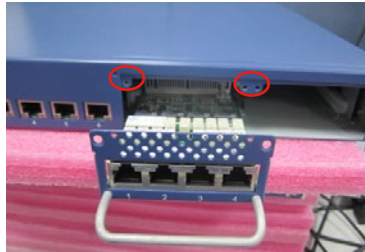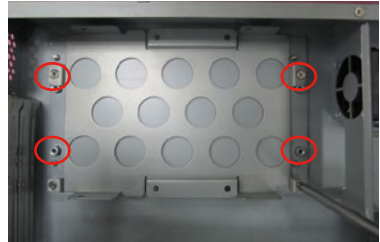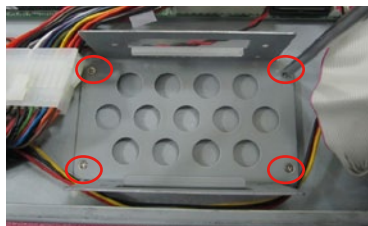2. Install the first 2.5" HDD in the bracket with four screws.

3. Install the second 2.5" HDD in the bracket with four screws.

4. Install 2.5" HDD module on the base chassis with four screws.

Jumpers and Connectors

The board has a number of jumpers that allow you to configure your system to suit your application. The table below lists the function of each of the jumpers and connectors.

Jumper/Connector list	
Label	**Function**
CMOS1	Clear CMOS
JWDT1~4	Short watchdog
JVGPIO1	Short GPIO power
JUART1	Short selection BMC
PSON1	Short ATX
LPT1	Parallel port
USB34	Internal USB
VGA1	VGA connector
COM2	Serial port
LPC1	Debug port
KBMS1	PS2 Keyboard/Mouse
SYSFAN1~4	FAN connector
SATA_PWR1	5V SATA power connector
SYS_RST1	Reset system button
PWR_BTN1	System power on/off button
HDD_LED1	HDD LED pin header
PWR_LED1	5V power led pin header
JCASE1	Case open connector
Status_LED1~3	LAN1-2~LAN5-6 Bypass status LED
BP_Force1~3	LAN1-2~LAN5-6 Bypass force button
JTAG1	Burn in data
JTAG2	Burn in CPLD data
FP1	Front panel
GPIO1	GPIO function

CMOS1	
Pins	**Result**
1-2	Normal*
2-3	Clear CMOS
*: Default	

Keep CMOS data*   Clear CMOS data
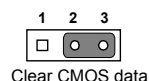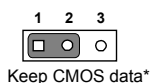
Jumpers and Connectors

JWDT1~4

Pins	Result
1-2	Short watchdog is WDT_OUT1~4_N*
2-3	Short watchdog is WDT_OUT0_N
*: Default	

JVGPIO1

Pins	Result
1-2	Short GPIO power +V5_SB*
2-3	Short GPIO power +V3.3_SB
*: Default	

JUART1

Pins	Result
1-2	Short selection BMC_UART_SWTCH# signal*
2-3	Short selection BMC_DETECT# signal
*: Default	

PSON1

Pins	Result
2-3	Short ATX*
1-2	Short AT
*: Default	

LPT1: Parallel port (for LCM module usage)

Pins	Result
1	PIO_STB
2	#AFD
3	PIO_PD0
4	#ERR
5	PIO_PD1
6	#INIT
7	PIO_PD2
8	#SLIN
9	PIO_PD3
10	GND
11	PIO_PD4
12	GND
13	PIO_PD5
14	GND
15	PIO_PD6
16	GND
17	PIO_PD7
18	GND
19	#ACK
20	GND
21	BUSY
22	GND
23	PE
24	GND
25	SLCT
26	GND

LPT1
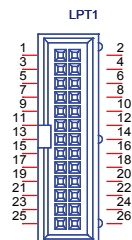
Jumpers and Connectors

Internal USB port3,4

Pins	Result
1	USBV1
2	USBV1
3	USB9_z_P-
4	USB9_z_P-
5	USB9_z_P+
6	USB9_z_P+
7	GND
8	GND
9	GND
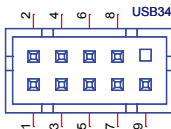
VGA1: VGA connector

Pins	Result
1	VGA_R
2	CRT_VCC
3	VGA_G
4	GND
5	VGA_B
6	N/C
7	N/C
8	V_SDAT
9	GND_V
10	HSYNC
11	GND_V
12	VSYNC
13	GND_V
14	V_SCLK
15	GND_V
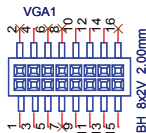
COM2: Serial port

Pins	Result
1	GND_F
2	NC
3	SERIAL2_DTR
4	SERIAL2_RI
5	SERIAL2_TXD
6	SERIAL2_CTS
7	SERIAL2_RXD
8	SERIAL2_RTS
9	SERIAL2_DCD
10	SERIAL2_DSR
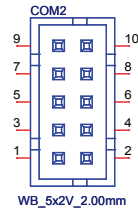
LPC1: Debug port

Pins	Result
1	LPC_FRAME#
2	GND
3	LPC_AD0
4	CLK33M_LPC0
5	LPC_AD1
6	PCI_SERIRQ
7	LPC_AD2
8	PLTRST_SIO#
9	LPC_AD3
10	+V3.3
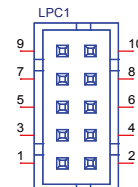
Jumpers and Connectors

KBMS1: PS2 Keyboard/Mouse

Pins	Result
1	MSCK
2	KBMS_VCC
3	GND
4	MSDT
5	KBDT
6	KBCK
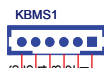
SYSFAN1~4: FAN connector

Pins	Result
1	GND
2	+12V
3	FAN_SPEED0
4	FAN_PWM

SATA_PWR1: 5V SATA power connector

Pins	Result
1	+V5
2	GND
3	GND
4	+V12

SYS_RST1: Reset system button

Pins	Result
1	SRST_IN#
2	GND

PWR_BTN1: System power on/off button

Pins	Result
1	FP_PANSWIN#
2	GND

HDD_LED1: HDD LED pin header

Pins	Result
1	VCC
2	SATA_LED

PWR_LED1: 5V power led pin header

Pins	Result
1	+V5
2	GND

JCASE1: Case open connector

Pins	Result
1	CASEOP#
2	GND

LED1~3: LAN1-2~LAN5-6 Bypass status display

Pins	Result
1	RELA_ON_0# /1# /2#
2	RELA_ON_0/1/1

BP_FORCE1~3: LAN1-2~LAN5-6 Bypass force button

Pins	Result
1	BTN_SW1/SW2/SW3
2	+V3.3A

Jumpers and Connectors

JTAG1: Burn in data

Pins	Result
1	JTAG_TCK
2	+V3.3
3	JTAG_TMS
4	GND
5	JTAG_TDI
6	GND
7	JTAG_TDO
8	GND
9	JTAG_RST#
10	+V3.3

JTAG1

FP1 front panel

Pins	Result
1	+V5
2	GND
3	Power button
4	SYSTEM RESET
5	SMBUS CLK
6	SMBUS DATA
7	+V3.3
8	SATA_LED#

FP1

WB_4x2V_2.0mm
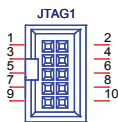
JTAG2: Burn in CPLD data

Pins	Result
1	+V3_SB
2	TDO
3	TDI
4	NC
5	TMS
6	GND
7	TCK

JTAG2
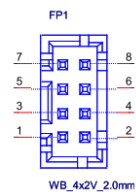
GPIO1: GPIO function

Pins	Result
1	PCA_GPIO0
2	PCA_GPIO4
3	PCA_GPIO1
4	PCA_GPIO5
5	PCA_GPIO2
6	PCA_GPIO6
7	PCA_GPIO3
8	PCA_GPIO7
9	VCC_GPIO
10	GND

GPIO1

Software Installation

Software tested list:
- Windows Server2008
- Windows Server2003
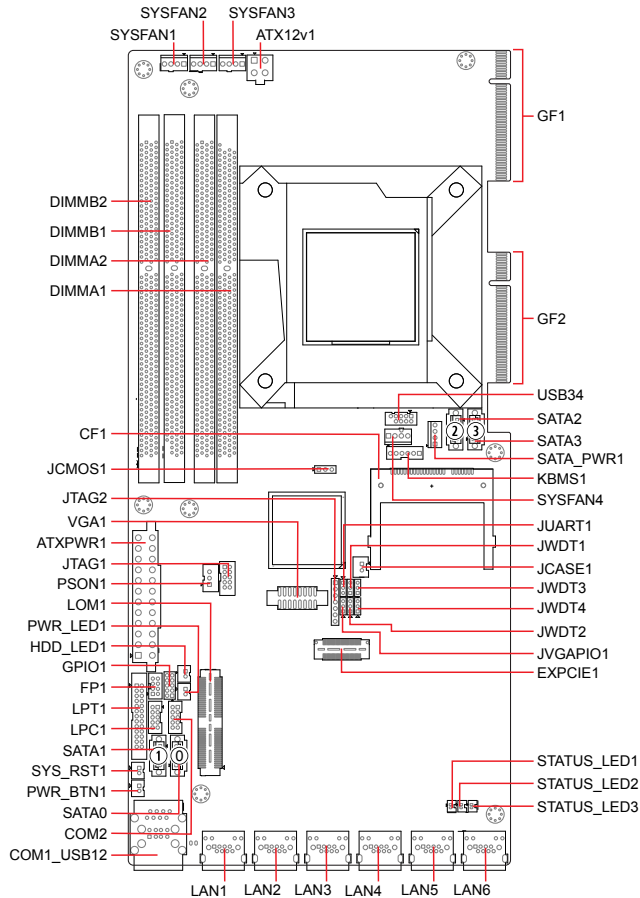- Windows 7 Ultimate
- Windows Vista Enterprise SP1

- Red Hat Enterprise 5.4
- RHEL 6.1
- SUSE 11.1
- Fedora core 15
- Red Hat Enterprise 5.4

Board Placement

Safety Instructions

1. Read these safety instructions carefully.

2. Keep this user manual for later reference.

3. Disconnect this equipment from AC outlet before cleaning. Do not use liquid or spray detergents for cleaning.

4. For pluggable equipment, the power outlet shall be installed near the equipment and shall be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.

7. Do not leave this equipment in an environment unconditioned where the storage temperature under 0°C (32°F) or above 40°C (104°F), it may damage the equipment.

8. The openings on the enclosure are for air convection hence protects the equipment from overheating. DO NOT COVER THE OPENINGS.

9. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

10. Place the power cord such a way that people can not step on it. Do not place anything over the power cord. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product.

11. All cautions and warnings on the equipment should be noted.

12. If the equipment is not used for long time, disconnect it from the power source to avoid being damaged by transient over-voltage.

13. Never pour any liquid into ventilation openings. This could cause fire or electrical shock.

14. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

15. If any of the following situations arises, get the equipment checked by service personnel:

    a. The power cord or plug is damaged.

    b. Liquid has penetrated into the equipment.

    c. The equipment has been exposed to moisture.

    d. The equipment does not work well or you cannot get it to work according to user manual.

    e. The equipment has been dropped and damaged.

    f. The equipment has obvious signs of breakage.

16. CAUTION: The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if bat¬tery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacturer's instructions.

17. THE COMPUTER IS PROVIDED WITH CD DRIVES THAT COMPLY WITH APPROPRIATE SAFETY STANDARDS, INCLUDING IEC 60825.

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CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
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18. This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

19. CAUTION: Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges.

20. CAUTION: Always ground yourself to remove any static charge before touching the motherboard, backplane, or add-on cards. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis.

21. CAUTION: Any unverified component could cause unexpected damage. To ensure the correct installation, please always use the components (ex. screws) provided with the accessory box.

22. Caution text concerning lithium batteries:

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig

håndtering.

Udskiftning må kun ske med batteri af samme

fabrikat og type.

Levér det brugte batteri tilbage tilleverandøren.

23. "Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

    A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

    B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

    C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

    D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

    E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."